BERKELEY LAB

Environment / Health / Safety
DIVISION
Environmental Services

Via email and certified mail
Receipt No. 7009 2820 0004 4632 8621

Reference No.: ES-15-046

March 2, 2015

Ms. Carmen Santos
Regional PCB Coordinator
US EPA Region 9
75 Hawthorne Street
Mail Code: WST-5
San Francisco, CA 94105

Subject: Groundwater Sampling Results for Polychlorinated Biphenyls (PCBs) in the Old Town Demolition Project Area of Lawrence Berkeley National Laboratory

Dear Ms. Santos,

The purpose of this letter is to respond to your February 3, 2015 request for information on polychlorinated biphenyls (PCBs) in groundwater in the Old Town Demolition Project (Project) area at Lawrence Berkeley National Laboratory (LBNL). In order to provide up to date information, LBNL collected groundwater samples from 15 well locations in the Project area in February 2015 for PCB analysis. No PCBs were detected.

Background

On February 3, 2015 a conference call was held to discuss PCB contamination found in the Project area. Participants in the conference call included Carmen Santos (the United States Environmental Protection Agency (EPA) Region 9 PCB Coordinator), LBNL representatives, United States Department of Energy (DOE) representatives, and representatives of LBNL's demolition subcontractor DMS. A listing of the LBNL, DOE, and DMS attendees is provided as Attachment 1. During the call you requested information regarding groundwater monitoring data for PCBs. The requested information is provided below.

Historical PCB Groundwater Results

Between 1998 and 2007 LBNL collected 26 groundwater samples for PCB analysis from five wells located in the current Project area. No PCBs were detected. Table 1 in Attachment 2 provides a list of the wells sampled, the sampling dates, and the detection limits. Figure 1 in Attachment 2 is a map showing sampling locations, locations where PCBs were detected in soil samples, and groundwater flow directions.

Lawrence Berkeley National Laboratory
One Cyclotron Road | Berkeley, California 94720 | Mail Stop 75B0101 | Tel: 510.486.7614 | Fax: 510.486.6939
Email: ROPauer@lbl.gov

2015 PCB Groundwater Results

In order to provide a current and more comprehensive assessment of potential PCB contamination in the Project area groundwater, LBNL collected groundwater samples in February 2015 from 15 wells for PCB analysis. Groundwater samples were collected from 1) wells in the Project area located in or near areas where PCBs had been detected in the soil, except for one well with insufficient volume of water for sampling, and 2) a number of wells downgradient from the areas of soil contamination. Figure 2 in Attachment 2 shows the groundwater sampling locations, the locations where PCBs were detected in soil samples, and groundwater flow directions.

The Environmental Services Group (ESG) Sample Collection Form is included as Attachment 3. The Sample Collection Form provides the location (well number) of the wells that were scheduled for sampling, the corresponding Sample ID, the analytical laboratory, the requested analytical method, the date and time (if sampled), and the sample container. Environmental Restoration Program Groundwater Sampling Data Sheets are provided as Attachment 4. The data sheets include information on depth to groundwater, well purging volumes, water quality data, materials used for sampling, and instrument calibration.

Samples were collected in accordance with the methods specified in LBNL's ESG Procedure 233 Revision 01. All samples were analyzed by Curtis and Tompkins Ltd., a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory located in Berkeley, California. Samples were analyzed for PCBs by EPA Method 8082. The two laboratory analytical reports that cover the 15 samples collected in February 2015 are provided as Attachment 5. No PCBs were detected (<0.5 µg/L).

Conclusion

The data collected during the evaluation described above indicates that no detectable PCBs are present in groundwater in the Old Town Demolition Project area.

If you have any questions or require additional information please contact David Baskin (dabaskin@lbl.gov) at 510-486-5684 or me (ropauer@lbl.gov) at 510-486-7614.

Sincerely,

Ron Pauer

Ron Pauer
Environmental Manager

Attachments:

1) Conference Call Participants
2) Table and Figures
3) Environmental Services Group Sample Collection Form
4) Environmental Restoration Program Groundwater Sampling Data Sheets
5) Curtis and Tompkins Analytical Reports (2)

cc via email w/attachments:

Kim Abbott (kvabbott@lbl.gov)
Steve Armann (armann.steve@epa.gov)
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Jack Salazar (jjsalazar@lbl.gov)
Jacinto Soto jsoto@dtsc.ca.gov
Karen Toth (ktoth@dtsc.ca.gov)
Nancy Ware (NMWare@lbl.gov)

Attachment 1

February 3, 2015 Conference Call Participants

Meeting Attendance Register – Conference Call with EPA Regional PCB Coordinator on Old Town – Room 75-124-CR(20)

Meeting Date: February 3, 2015

Name	Organization	Telephone	Email
Ron Paller	LBNL	486-7614	rapaller@lbl.gov
JOE GANTOS	LBNL	x 5077	njgantos@lbl.gov
JEFFRY PARKIN	DMS	x 6170	JPARKIN@DMSMP.COM
KIAN ATKINSON	DMS	x 6170	KATKINSON@DMSMP.COM
Dottie Norman	DMS	509-539-3405	dnorman@dmsmp.com
BRUCE MARVIN	GEOSYNTEC DMS	510 285 2755	BMARVIN@GEOSYNTEC.COM
BOB DEJANA	WEISS	510-450-6144	rod@weiss.com
TED MANKOWSKI	LBL	510-495-2012	tmankowski@LBL.gov
Mary Gross	DOE-BSO	510-486-4373	Mary.Gross@SCIENCE.DOE.GOV
Bob Cronin	LBNL	510-495-2849	rdcronin@LBL.gov
Joseph Harkins	LBNL	510-486-7486	jpharkins@lbl.gov
KEVIN BAZZELL	DOE-EM	510-486-5547	KEVIN.BAZZELL@EMCBC.DOE.GOV

Attachment 2

Table and Figures

Table 1
Old Town Demolition Project Area
Historical Groundwater Monitoring Results
Polychlorinated Biphenyls

Well Number	Sampling Date	Result[a]	Detection Limit
MW5-93-10	2/11/2015	ND	0.5 µg/L[b]
MW7-92-16	2/11/2015	ND	0.5 µg/L
MW16-94-13	6/10/1998	ND	0.2 µg/L
	5/28/1999	ND	0.2 µg/L
	9/12/2000	ND	0.2 µg/L
	9/12/2001	ND	0.2 µg/L
	9/4/2002	ND	0.2 µg/L
	8/20/2003	ND	0.2 µg/L
	2/11/2015	ND	0.5 µg/L[b]
MW16-95-3	2/11/2015	ND	0.5 µg/L[b]
MW52-93-14	4/11/2000	ND	0.3 µg/L
MW52-95-2B	2/10/2015	ND	0.5 µg/L[b]
MW52A-98-8B	2/10/2015	ND	0.5 µg/L[b]
MW52B-95-13	12/22/1998	ND	0.2 µg/L
	9/14/2000	ND	0.2 µg/L
	9/17/2003	ND	0.2 µg/L
	8/17/2004	ND	0.2 µg/L
	8/23/2007	ND	0.2 µg/L
	2/12/2015	ND	0.5 µg/L[b]
MW53-93-9	2/11/2015	ND	0.5 µg/L[b]
MW53-96-1	2/11/2015	ND	0.5 µg/L[b]
MW90-2	2/11/2015	ND	0.5 µg/L[b]
MW91-9	2/11/2015	ND	0.5 µg/L[b]
EW7C-04-2	2/10/2015	ND	0.5 µg/L[b]
SB7-97-1	2/12/2015	ND	0.5 µg/L[b]
SB16-97-11	4/7/2000	ND	0.2 µg/L
	5/16/2001	ND	0.2 µg/L
	3/26/2002	ND	0.2 µg/L
	3/5/2003	ND	0.2 µg/L
	3/8/2004	ND	0.2 µg/L
	3/21/2005	ND	0.2 µg/L
	2/12/2015	ND	0.5 µg/L[b]
SB16-98-1	3/22/1999	ND	0.5 µg/L
	6/16/1999	ND	0.2 µg/L
	10/17/2000	ND	0.2 µg/L
	10/3/2001	ND	0.2 µg/L
	3/22/2002	ND	0.2 µg/L
	9/30/2002	ND	0.2 µg/L
	9/17/2003	ND	0.2 µg/L
	9/13/2004	ND	0.2 µg/L
	2/12/2015	ND	0.5 µg/L[b]

(a) Aroclors: 1016, 1221, 1232, 1242, 1248, 1254, and 1260
(b) Aroclor 1221 detection limit is 1.0 µg/L
ND: No PCBs detected.

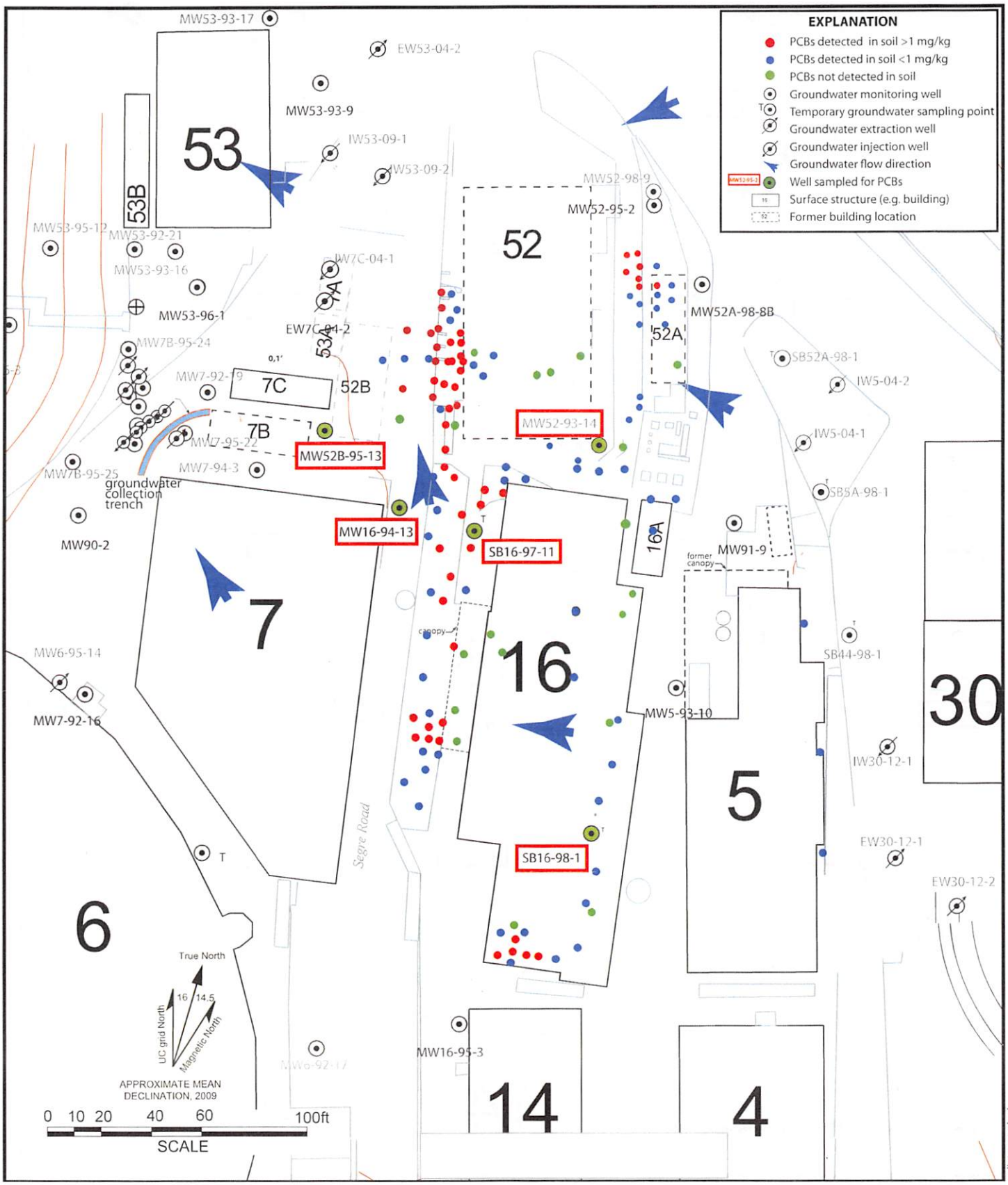

Figure 1. Locations of Old Town Demolition Project Area Wells Sampled for PCBs Before 2015.

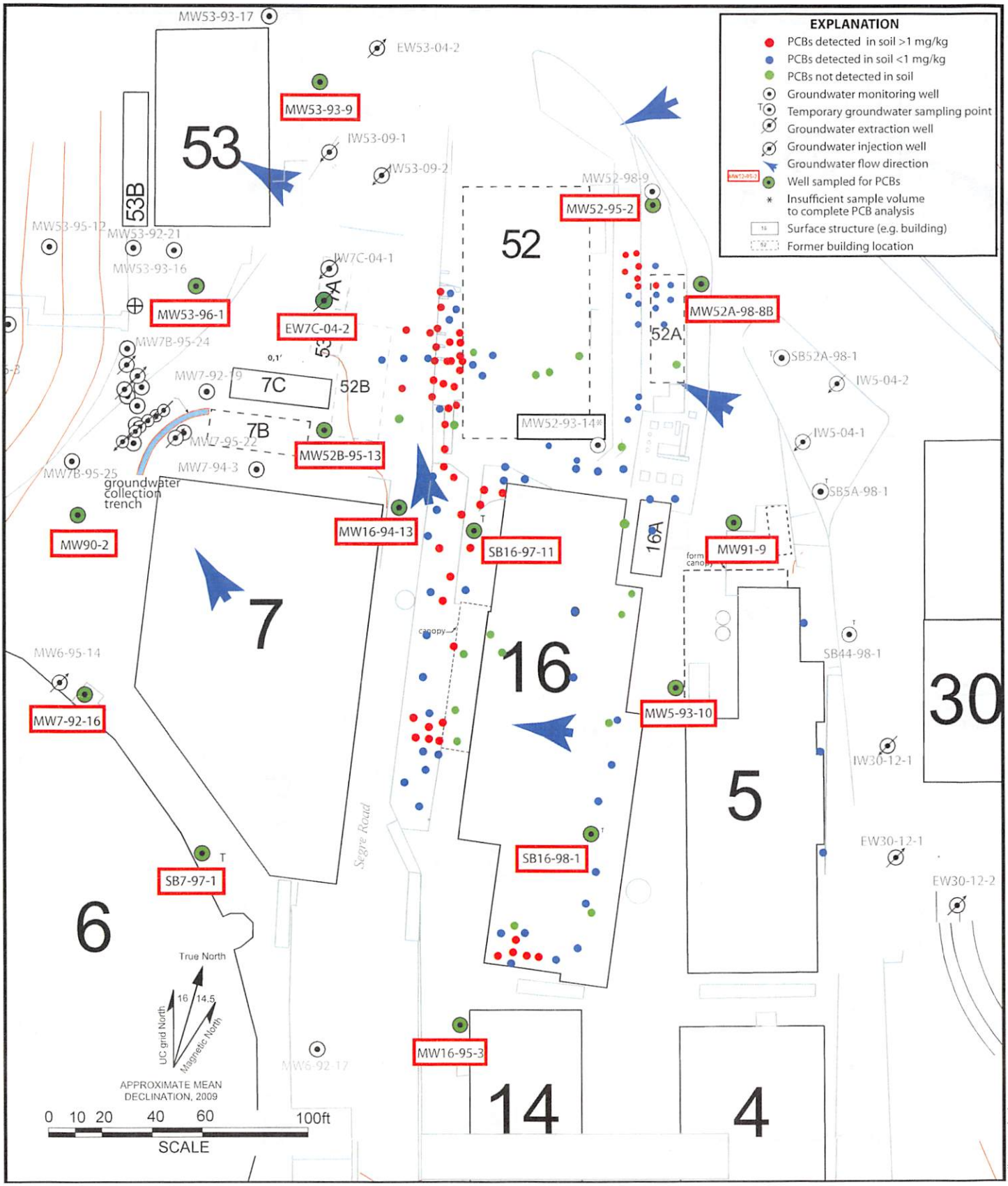

Figure 2. Locations of Old Town Demolition Project Area Wells Sampled for PCBs in February 2015.

Attachment 3

Environmental Services Group Sample Collection Forms

ESG Sample Collection Form

U.C. Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley CA 94720

Groundwater Monitoring
Old Town Groundwater Sampling in PCBs, Feb 2015
Collection: 7698

Sample Data

Sample ID	Location	SampleType	QC Type	Coll Type	Lab/Analysis	Date/time	Container(s)	Presv	Amount	Depth ft	Sample Notes
75180 2-15-47	MW16-94-13	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/11/2015 9:40:00 AM	2-1 Liter AG	None	1 S		
75181 2-15-44	MW16-95-3	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/11/2015 8:20:00 AM	2-1 Liter AG	None	1 S		
75182 2-15-55	SB16-97-11	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/12/2015 8:10:00 AM	2-1 Liter AG	None	1 S		
75183 2-15-57	SB16-98-1	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/12/2015 8:50:00 AM	2-1 Liter AG	None	1 S		
75184 2-15-46	MW5-93-10	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/11/2015 9:00:00 AM	2-1 Liter AG	None	1 S		
75185 2-15-49	MW7-92-16	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/11/2015 11:30:00 AM	2-1 Liter AG	None	1 S		
75186 2-15-53	SB7-97-1	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/12/2015 7:10:00 AM	2-1 Liter AG	None	1 S		
75187 2-15-36	EW7C-04-2	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/10/2015 9:45:00 AM	2-1 Liter AG	None	1 S		
75188 2-15-51	MW90-2	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/11/2015 12:35:00 PM	2-1 Liter AG	None	1 S		
75189 2-15-45	MW91-9	Aqueous Sample Collected: **Yes**	Sample	Grab	CURTISTOMP E8082A	2/11/2015 8:40:00 AM	2-1 Liter AG	None	1 S		

Sample Data

Sample ID	Location	SampleType	QC Type	Coll Type	Lab/Analysis	Date/time	Container(s)	Presv	Amount	Depth ft	Sample Notes
75190	MW52-93-14	Aqueous	Sample	Grab	CURTISTOMP		2-1 Liter AG	None	1 S		
		Sample Collected: Yes			E8082A						
75191	MW52-95-2B	Aqueous	Sample	Grab	CURTISTOMP	2/10/2015 10:30:00 AM	2-1 Liter AG	None	1 S		
2-15-37		Sample Collected: Yes			E8082A						
75192	MW52A-98-8B	Aqueous	Sample	Grab	CURTISTOMP	2/10/2015 10:50:00 AM	2-1 Liter AG	None	1 S		
2-15-38		Sample Collected: Yes			E8082A						
75193	MW52B-95-13	Aqueous	Sample	Grab	CURTISTOMP	2/12/2015 7:45:00 AM	2-1 Liter AG	None	1 S		
2-15-54		Sample Collected: Yes			E8082A						
75194	MW53-93-9	Aqueous	Sample	Grab	CURTISTOMP	2/11/2015 10:10:00 AM	2-1 Liter AG	None	1 S		
2-15-48		Sample Collected: Yes			E8082A						
75195	MW53-96-1	Aqueous	Sample	Grab	CURTISTOMP	2/11/2015 12:10:00 PM	2-1 Liter AG	None	1 S		
2-15-50		Sample Collected: Yes			E8082A						

Attachment 4

Environmental Restoration Program Groundwater Sampling Data Sheets

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/10/2015 **Well Number:** EW7C-04-2

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	5	Purge Taget Volume (3 x c_v) (gal)	30.58
Total Depth (h_2) (ft):	80	Total Volume Purged (gal): (c_v)	nm
Initial Depth-to-Water (DTW) (ft):	70	Did well go dry? (y/n)	no
Water Column (H) (ft):	10	Post sample DTW (ft):	nm
Casing Volume (c_v) (gal):	10.19		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/10/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☐	

DESCRIPTION OF WORK DONE

Grab sample collected from extraction well.... One set of parameters also collected

Work Dates: 2/10/2015 **Well Number:** EW7C-04-2

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	9:40	0.00	17.3	7.05	558	Clear
0.5 cv		5.10				
1.0 cv		10.19				
1.5 cv		15.29				
2.0 cv		20.39				
2.5 cv		25.49				
3.0 cv		30.58				
--- cv						
--- cv						
--- cv						
--- cv						

SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/10/2015	9:45	2-15-36	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/10/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/11/2015 **Well Number:** MW16-94-13

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	15.34
Total Depth (h_2) (ft):	42.52	Total Volume Purged (gal): (3 c_v)	15.34
Initial Depth-to-Water (DTW) (ft):	11.17	Did well go dry? (y/n)	n
Water Column (H) (ft):	31.35	Post sample DTW (ft):	40.4
Casing Volume (c_v) (gal):	5.11		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/11/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples

Work Dates: 2/11/2015 **Well Number:** MW16-94-13

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	9:27	0.00	14.8	7.45	603	clear
0.5 cv	9:28	2.56	16.7	7.25	590	clear
1.0 cv	9:30	5.11	17.5	7.17	587	clear
1.5 cv	9:32	7.67	18.0	7.18	586	clear
2.0 cv	9:34	10.23	18.6	7.24	589	clear
2.5 cv	9:36	12.78	18.3	7.27	599	clear
3.0 cv	9:37	15.34	18.1	7.31	601	clear
--- cv						
--- cv						
--- cv						
--- cv						

SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/11/2015	9:40	2-15-47	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/11/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Digitally signed by David Baskin DN: cn=David Baskin, o=LBNL, ou=ESG, email=dbaskin@lbl.gov, c=US Date: 2015.02.24 08:13:12 -08'00' Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/11/2015 **Well Number:** MW16-95-3

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	11.53
Total Depth (h_2) (ft):	38.34	Total Volume Purged (gal): (3 c_v)	11.53
Initial Depth-to-Water (DTW) (ft):	14.77	Did well go dry? (y/n)	N
Water Column (H) (ft):	23.57	Post sample DTW (ft):	35.6
Casing Volume (c_v) (gal):	3.84		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/11/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples

Work Dates: 2/11/2015 **Well Number:** MW16-95-3

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	8:10	0.00	12.5	7.39	495	clear
0.5 cv	8:11	1.92	15.4	7.24	508	clear
1.0 cv	8:12	3.84	16.8	7.19	495	clear
1.5 cv	8:13	5.77	17.9	7.17	508	clear
2.0 cv	8:14	7.69	18.4	7.14	500	clear
2.5 cv	8:15	9.61	17.9	7.14	495	clear
3.0 cv	8:16	11.53	18.1	7.17	497	clear
--- cv						
--- cv						
--- cv						
--- cv						

SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/11/2015	8:20	2-15-44	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/11/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Digitally signed by David Baskin DN: cn=David Baskin, o=LBNL, ou=ESG, email=dabaskin@lbl.gov, c=US Date: 2015.03.24 08:55:44 -07'07' Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/10/15, 2/17/15 **Well Number:** MW52-93-14

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	0.66
Total Depth (h_2) (ft):	40.05	Total Volume Purged (gal): (c_v)	0.66
Initial Depth-to-Water (DTW) (ft):	38.7	Did well go dry? (y/n)	yes
Water Column (H) (ft):	1.35	Post sample DTW (ft):	NA
Casing Volume (c_v) (gal):	0.22		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/10/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☐	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Bailed well dry- returned 2/17/15 to collect samples. Well only had about 1/3 liter of water. Not enough for a representative sample....jkc

Work Dates: 2/10/15, 2/17/15 **Well Number:** MW52-93-14

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	13:48	0.00	17.7	8.00	475	Turbid-brown
0.5 cv	13:50	0.11	17.4	7.92	481	Turbid-brown
1.0 cv	13:52	0.22	17.0	7.75	483	Turbid-brown
1.5 cv	13:54	0.33				Dry at .3 gallons
2.0 cv		0.44				
2.5 cv		0.55				
3.0 cv		0.66				
--- cv						
--- cv						
--- cv						
--- cv						

SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
			PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/12/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/10/2015 **Well Number:** MW52-95-2B

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	27.85
Total Depth (h_2) (ft):	109.12	Total Volume Purged (gal): (c_v)	27.85
Initial Depth-to-Water (DTW) (ft):	52.2	Did well go dry? (y/n)	no
Water Column (H) (ft):	56.92	Post sample DTW (ft):	62.1
Casing Volume (c_v) (gal):	9.28		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/10/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☐	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples from sampling port. (Has a dedicated pump)

Work Dates: 2/10/2015 **Well Number:** MW52-95-2B

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	10:08	0.00	16.9	7.31	613	Clear
0.5 cv	10:11	4.64	18.0	7.18	593	Clear
1.0 cv	10:14	9.28	18.4	7.15	592	Clear
1.5 cv	10:17	13.93	18.5	7.15	591	Clear
2.0 cv	10:20	18.57	18.5	7.17	590	Clear
2.5 cv	10:23	23.21	18.5	7.17	591	Clear
3.0 cv	10:26	27.85	18.5	7.20	590	Clear
--- cv						
--- cv						
--- cv						
--- cv						

SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/10/2015	10:30	2-15-37	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/10/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/10/2015 **Well Number:** MW52A-98-8B

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	10.81
Total Depth (h_2) (ft):	80	Total Volume Purged (gal): (c_v)	10.81
Initial Depth-to-Water (DTW) (ft):	57.9	Did well go dry? (y/n)	No
Water Column (H) (ft):	22.1	Post sample DTW (ft):	67.5
Casing Volume (c_v) (gal):	3.60		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/10/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples from sampling port (Has a dedicated pump)

Work Dates: 2/10/2015 **Well Number:** MW52A-98-8B

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	10:33	0.00	18.2	7.20	670	clear
0.5 cv	10:35	1.80	18.4	7.07	843	clear
1.0 cv	10:37	3.60	18.5	7.10	839	clear
1.5 cv	10:39	5.41	18.7	7.13	837	clear
2.0 cv	10:41	7.21	18.7	7.16	842	clear
2.5 cv	10:43	9.01	18.7	7.17	839	clear
3.0 cv	10:45	10.81	18.7	7.16	840	clear
--- cv						
--- cv						
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--- cv						

SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/10/2015	10:50	2-15-38	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/10/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Digitally signed by David Baskin DN: cn=David Baskin, o=LBNL, ou=ESG, email=dabaskin@lbl.gov, c=US Date: 2015.02.24 08:57:08 -08'00' Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/12/2015 **Well Number:** MW52B-95-13

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu			
Well Diameter (in):	1	Purge Taget Volume (3 x c_v) (gal)	1.45
Total Depth (h_2) (ft):	27.93	Total Volume Purged (gal): (c_v)	1.45
Initial Depth-to-Water (DTW) (ft):	16.04	Did well go dry? (y/n)	no
Water Column (H) (ft):	11.89	Post sample DTW (ft):	22.2
Casing Volume (c_v) (gal):	0.48		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/12/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☑	**Notes:**
Rediflow Pump	☐	
Sample Bottles	☑	
Teflon Bailer	☐	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples

Work Dates: 2/12/2015 **Well Number:** MW52B-95-13

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	7:28	0.00	15.4	7.00	539	Clear
0.5 cv	7:30	0.24	16.4	7.02	527	Clear
1.0 cv	7:32	0.48	16.9	7.06	526	Clear
1.5 cv	7:35	0.73	17.0	7.02	524	Clear
2.0 cv	7:37	0.97	17.0	7.05	528	Clear
2.5 cv	7:40	1.21	17.0	7.04	530	Clear
3.0 cv	7:42	1.45	17.1	7.05	532	Clear
--- cv						
--- cv						
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SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/12/2015	7:45	2-15-54	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/12/2015

Other Field Personnel:

Reviewed by (sign): David Baskin Digitally signed by David Baskin DN: cn=David Baskin, o=LBNL, ou=ESG, email=dabaskin@lbl.gov, c=US Date: 2015.02.24 08:57:34 -08'00' Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/11/2015 **Well Number:** MW53-93-9

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	14.69
Total Depth (h_2) (ft):	87.7	Total Volume Purged (gal): (3 c_v)	14.69
Initial Depth-to-Water (DTW) (ft):	57.67	Did well go dry? (y/n)	N
Water Column (H) (ft):	30.03	Post sample DTW (ft):	58.13
Casing Volume (c_v) (gal):	4.90		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/11/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples

Work Dates: 2/11/2015 **Well Number:** MW53-93-9

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	9:55	0.00	16.6	7.21	513	semi-turbid, brownish color
0.5 cv	9:56	2.45	16.7	7.10	532	semi-turbid, brownish color
1.0 cv	9:58	4.90	18.5	7.05	531	semi-turbid, brownish color
1.5 cv	9:59	7.35	18.8	7.05	531	semi-clear
2.0 cv	10:03	9.80	18.7	7.38	533	semi-clear
2.5 cv	10:04	12.25	19.0	7.18	533	clear
3.0 cv	10:06	14.69	19.5	7.13	533	clear
--- cv						
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--- cv						

SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/11/2015	10:10	2-15-48	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/11/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Digitally signed by David Baskin DN: cn=David Baskin, o=LBNL, ou=ESG, email=dabaskin@lbl.gov, c=US Date: 2015.02.24 08:57:57 -08'00' Date:

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Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/11/2015 **Well Number:** MW53-96-1

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	4	Purge Taget Volume (3 x c_v) (gal)	69.05
Total Depth (h_2) (ft):	81.4	Total Volume Purged (gal): (3 c_v)	69.05
Initial Depth-to-Water (DTW) (ft):	46.12	Did well go dry? (y/n)	N
Water Column (H) (ft):	35.28	Post sample DTW (ft):	75.5
Casing Volume (c_v) (gal):	23.02		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/11/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples

Work Dates: 2/11/2015 **Well Number:** MW53-96-1

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	11:43	0.00	17.6	7.20	646	clear
0.5 cv	11:47	11.51	19.2	7.00	616	clear
1.0 cv	11:50	23.02	19.8	6.98	607	clear
1.5 cv	11:53	34.53	20.2	7.00	606	clear
2.0 cv	11:57	46.03	20.2	7.00	606	clear
2.5 cv	12:00	57.54	20.1	6.99	607	clear
3.0 cv	12:04	69.05	20.0	6.99	608	clear
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SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/11/2015	12:10	2-15-50	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/11/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Digitally signed by David Baskin DN: cn=David Baskin, o=LBNL, ou=ESG, email=dabaskin@lbl.gov, c=US Date: 2015.02.24 00:23:08 -08'00' Date:

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Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/11/2015 **Well Number:** MW5-93-10

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	10.38
Total Depth (h_2) (ft):	36.7	Total Volume Purged (gal): (3 c_v)	10.38
Initial Depth-to-Water (DTW) (ft):	15.48	Did well go dry? (y/n)	N
Water Column (H) (ft):	21.22	Post sample DTW (ft):	20.5
Casing Volume (c_v) (gal):	3.46		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/11/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples

Work Dates: 2/11/2015 **Well Number:** MW5-93-10

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	8:49	0.00	12.7	7.79	882	cloudy
0.5 cv	8:50	1.73	15.8	7.27	520	cloudy
1.0 cv	8:52	3.46	17.0	7.18	510	clear
1.5 cv	8:53	5.19	17.2	7.16	513	clear
2.0 cv	8:55	6.92	17.6	7.15	510	clear
2.5 cv	8:56	8.65	17.7	7.15	506	clear
3.0 cv	8:57	10.38	17.8	7.15	502	clear
--- cv						
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SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/11/2015	9:00	2-15-46	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/11/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Digitally signed by David Baskin Date: 2015.02.24 08:58:52 -08'00' Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/11/2015 **Well Number:** MW7-92-16

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	18.96
Total Depth (h_2) (ft):	60.4	Total Volume Purged (gal): (3 c_v)	18.96
Initial Depth-to-Water (DTW) (ft):	21.65	Did well go dry? (y/n)	N
Water Column (H) (ft):	38.75	Post sample DTW (ft):	22.2
Casing Volume (c_v) (gal):	6.32		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/11/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples

Work Dates: 2/11/2015 **Well Number:** MW7-92-16

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	11:13	0.00	17.7	7.15	496	semi-turbid, brownish color
0.5 cv	11:15	3.16	18.4	6.95	452	clear
1.0 cv	11:17	6.32	18.8	6.94	420	clear
1.5 cv	11:19	9.48	19.0	6.96	412	clear
2.0 cv	11:21	12.64	19.0	6.97	408	clear
2.5 cv	11:23	15.80	19.1	6.98	407	clear
3.0 cv	11:24	18.96	19.0	6.98	406	clear
--- cv						
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SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/11/2015	11:30	2-15-49	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/11/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/11/2015 **Well Number:** MW90-2

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	8.20
Total Depth (h_2) (ft):	35.5	Total Volume Purged (gal): (3 c_v)	8.2
Initial Depth-to-Water (DTW) (ft):	18.75	Did well go dry? (y/n)	N
Water Column (H) (ft):	16.75	Post sample DTW (ft):	29.43
Casing Volume (c_v) (gal):	2.73		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/11/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples

Work Dates: 2/11/2015 **Well Number:** MW90-2

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	12:26	0.00	19.5	7.92	531	semi-turbid, dark grey sediment
0.5 cv	12:27	1.37	21.6	7.34	531	semi-clear
1.0 cv	12:28	2.73	21,1	7.14	329	clear
1.5 cv	12:29	4.10	20.8	6.91	329	clear
2.0 cv	12:30	5.46	20.5	6.86	566	clear
2.5 cv	12:30	6.83	20.2	6.82	572	clear
3.0 cv	12:31	8.20	20.2	6.79	575	clear
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SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/11/2015	12:35	2-15-51	PCB's	JKC/NS	
2/11/2015	12:40	2-15-52	8260	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/11/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/11/2015 **Well Number:** MW91-9

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	10.45
Total Depth (h_2) (ft):	38.5	Total Volume Purged (gal): (3 c_v)	10.45
Initial Depth-to-Water (DTW) (ft):	17.15	Did well go dry? (y/n)	N
Water Column (H) (ft):	21.35	Post sample DTW (ft):	18.3
Casing Volume (c_v) (gal):	3.48		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/11/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped 3 cvs- collected samples

Work Dates: 2/11/2015 **Well Number:** MW91-9

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	8:30	0.00	11.3	7.44	388	semi-turbid - cloudy
0.5 cv	8:31	1.74	15.6	7.24	543	semi-turbid - cloudy
1.0 cv	8:32	3.48	15.9	7.22	538	semi-clear
1.5 cv	8:33	5.22	17.2	7.22	536	semi-clear
2.0 cv	8:34	6.96	17.5	7.23	535	clear
2.5 cv	8:35	8.71	17.6	7.25	534	clear
3.0 cv	8:36	10.45	17.7	7.26	534	clear
--- cv						
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SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/11/2015	8:40	2-15-45	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/11/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Date:

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Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/10/15,2/12/15 **Well Number:** SB16-97-11

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	1.13
Total Depth (h_2) (ft):	25.1	Total Volume Purged (gal): (c_v)	0.6
Initial Depth-to-Water (DTW) (ft):	22.8	Did well go dry? (y/n)	yes
Water Column (H) (ft):	2.3	Post sample DTW (ft):	dry
Casing Volume (c_v) (gal):	0.38		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/10/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☐	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Bailed well dry, returned 2/12/15 to samples

Work Dates: 2/10/15,2/12/15 **Well Number:** SB16-97-11

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	13:59	0.00	17.1	6.88	773	Semi-clear
0.5 cv	14:01	0.19	18.0	6.75	609	Semi-clear
1.0 cv	14:03	0.38	18.1	6.73	543	Semi-clear
1.5 cv	14:05	0.56				Dry at .5 gallons
2.0 cv		0.75				
2.5 cv		0.94				
3.0 cv		1.13				
--- cv						
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SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/12/2015	8:10	2-15-55	PCB's	JKC/NS	
2/12/2015	8:15	2-15-56	8260		

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/12/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Date:

Lawrence Berkeley National Laboratory
Environmental Restoration Program
GROUNDWATER SAMPLING DATA

Work Dates: 2/12/2015 **Well Number:** SB16-98-1

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	6.64
Total Depth (h_2) (ft):	27.2	Total Volume Purged (gal): (c_v)	6.64
Initial Depth-to-Water (DTW) (ft):	13.64	Did well go dry? (y/n)	no
Water Column (H) (ft):	13.56	Post sample DTW (ft):	22.5
Casing Volume (c_v) (gal):	2.21		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/12/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☐	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Bailed 3 cvs- collected samples

Work Dates: 2/12/2015 **Well Number:** SB16-98-1

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	8:25	0.00	15.7	7.33	552	turbid brown
0.5 cv	8:28	1.11	17.0	7.32	553	turbid brown
1.0 cv	8:31	2.21	17.4	7.34	555	turbid brown
1.5 cv	8:35	3.32	17.4	7.38	551	turbid brown
2.0 cv	8:37	4.42	17.4	7.35	554	turbid brown
2.5 cv	8:42	5.53	17.4	7.37	555	turbid brown
3.0 cv	8:44	6.64	17.4	7.41	552	turbid brown
--- cv						
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SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/12/2015	8:50	2-15-57	PCB's	JKC	
2/12/2015	8:55	2-15-58	8260	JKC	

ACKNOWLEDGMENT AND REVIEW

Prepared by (print): Jim Chiu Date: 2/12/2015

Other Field Personnel:

Reviewed by (sign): David Baskin Digitally signed by David Baskin DN: cn=David Baskin, o=LBNL, ou=ESG, email=dabaskin@lbl.gov, c=US Date: 2015.02.24 09:01:54 -08'00' Date:

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GROUNDWATER SAMPLING DATA

Work Dates: 2/11/2015 **Well Number:** SB7-97-1

GENERAL INFORMATION

Field Personnel (Print): Jim Chiu, Neel Singh			
Well Diameter (in):	2	Purge Taget Volume (3 x c_v) (gal)	11.75
Total Depth (h_2) (ft):	31.5	Total Volume Purged (gal): (<1.5c_v)	5
Initial Depth-to-Water (DTW) (ft):	7.49	Did well go dry? (y/n)	Y
Water Column (H) (ft):	24.01	Post sample DTW (ft):	17.7
Casing Volume (c_v) (gal):	3.92		

CALIBRATION

Instrument Name	Instrument Number	Date	Calibration Results Standard	Calibrated? (Y/N)	Initial
HACH	HQ40d	2/11/2015	pH 4.01	Yes	JKC
			pH 10.01	Yes	JKC
			1000 µs/cm	Yes	JKC

MATERIALS USED

Peristoltic Pump	☐	**Notes:**
Rediflow Pump	☑	
Sample Bottles	☑	
Teflon Bailer	☑	

DESCRIPTION OF WORK DONE

Pumped well dry, returned 2/12/15 to collect sample

Work Dates: 2/11/2015 **Well Number:** SB7-97-1

WATER QUALITY DATA

Casing Volume	Time	Cummulative Volume (Gallons)	Temperature (°C)	pH	Conductivity (µs/cm)	Qualitative Observations (color, turbidity, odors, sediment
Beginning	10:56	0.00	16.0	7.87	735	clear
0.5 cv	10:58	1.96	17.0	7.56	311	semi-turbid, brownish color
1.0 cv	11:01	3.92	17.5	7.19	308	semi-turbid, brownish color
1.5 cv	-	5.87	-	-	-	dry at 5 gal
2.0 cv		7.83				
2.5 cv		9.79				
3.0 cv		11.75				
--- cv						
--- cv						
--- cv						
--- cv						

SAMPLE INFORMATION

Sample Date	Sample Time	Sample Number	Analysis Requested	Sampler's Initials	Chain-of-Custody Number
2/12/2015	7:10	2-15-53	PCB's	JKC/NS	

ACKNOWLEDGMENT AND REVIEW

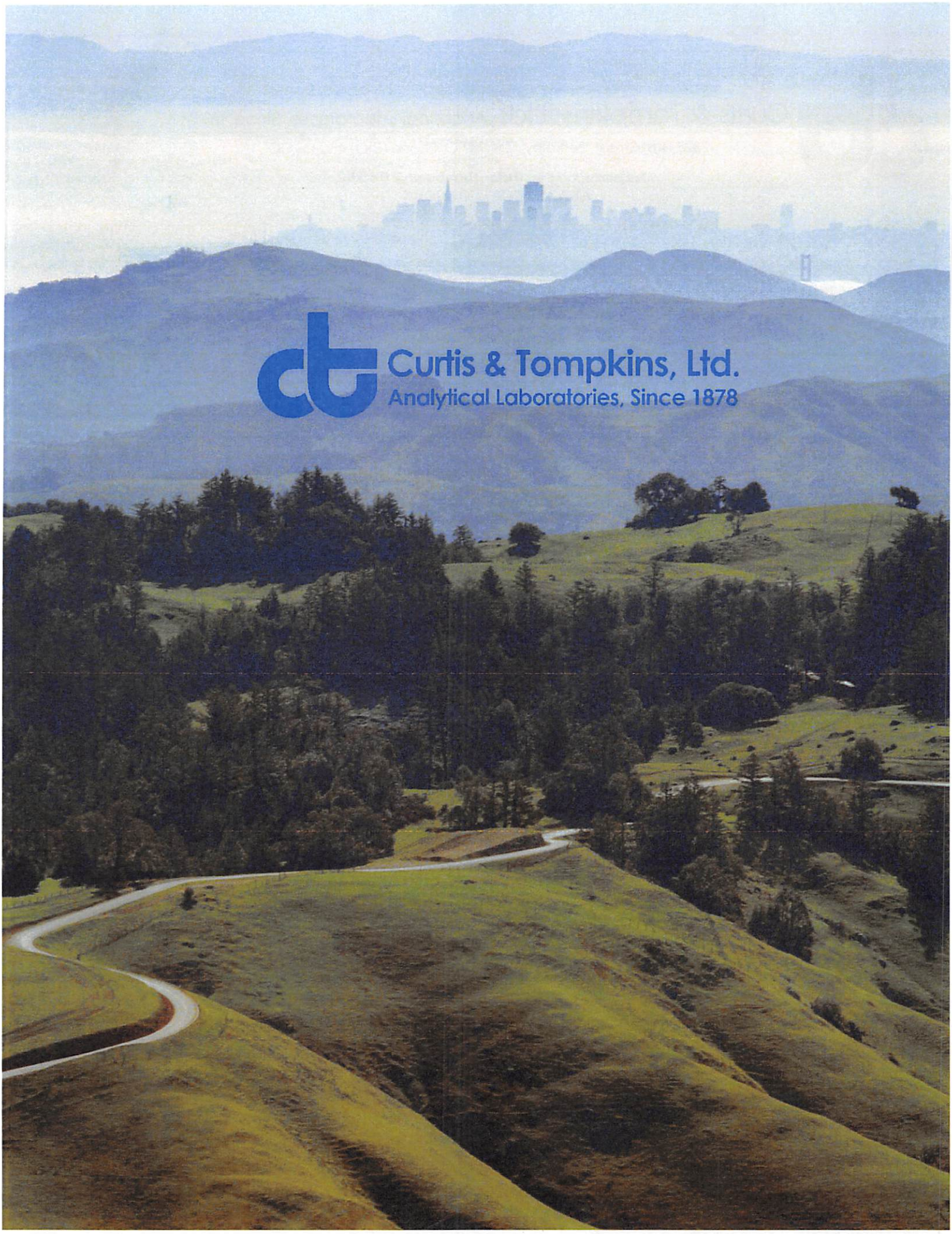
Prepared by (print): Jim Chiu Date: 2/12/2015

Other Field Personnel: Neel Singh

Reviewed by (sign): David Baskin Digitally signed by David Baskin Date: 2015.02.24 09:02:21 -08'00' Date:

Attachment 5

Analytical Report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2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 264562
ANALYTICAL REPORT

Lawrence Berkeley National Lab	Project : STANDARD
1 Cyclotron Road	Location : GWMP - Old Town Groundwater PCBs
Berkeley, CA 94720	Level : II

Sample ID	Lab ID
75187	264562-001
75191	264562-002
75192	264562-003

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Isabelle Choy Date: 02/18/2015

Isabelle Choy
Project Manager
isabelle.choy@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**264562**
Client:	**Lawrence Berkeley National Lab**
Location:	**GWMP - Old Town Groundwater PCBs**
Request Date:	**02/10/15**
Samples Received:	**02/10/15**

This data package contains sample and QC results for three water samples, requested for the above referenced project on 02/10/15. The samples were received on ice and intact. All holding times and calibration criteria were met.

PCBs (EPA 8082):

All samples underwent sulfuric acid cleanup using EPA Method 3665A. All samples underwent sulfur cleanup using the copper option in EPA Method 3660B. No analytical problems were encountered.

264562

U.C. Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley CA 94720

LBNL ENVIRONMENTAL RESTORATION
Chain of Custody

Send final reports to: Suying Xu, Mailstop 75B0101
Send preliminary results to: Iraj Javandel, e-mail: IJavandel@lbl.gov
Phone: 510-486-6106 Fax: 510-486-8694

COC No.: 08339

Page 1 of 1

Collection(s): 7698

Purpose: Groundwater Monitoring Program - Old Town Groundwater Sampling in PCBs, Feb 2015

75187	2/10/2015 9:45	2/10/2015 9:45	Aqueous	1 Liter AG	2	None	E8082A	2-15-36	
75191	2/10/2015 10:30	2/10/2015 10:30	Aqueous	1 Liter AG	2	None	E8082A	2-15-37	
75192	2/10/2015 10:50	2/10/2015 10:50	Aqueous	1 Liter AG	2	None	E8082A	2-15-38	

Total No. of Containers: 6
Shipping Document ID:
Turnaround Time**:** 5 days
Lab Name: CURTISTOMP
Sampled by: JKC

Special Instructions/Comments:
Samples Delivered on Blue Ice

Relinquished By (Sampler)	Relinquished By	Relinquished By
Signature: JK~ Time: 12:55	Signature / Time	Signature / Time
Printed Name: Jimmy K Chiu Date: 2/10/15	Printed Name / Date	Printed Name / Date
Company: LBNL	Company	Company

Received By	Received By	Received By
Signature: Troy Bibb 1255	Signature / Time	Signature / Time
Printed Name: Troy Bibb 2/10/15 CDT	Printed Name / Date	Printed Name / Date
Company	Company	Company

*REFERENCE DATE/TIME: Use this value for decay calculations in radiological analyses when applicable **Container Codes: AG = amber glass CG = clear glass PE = polyethylene VV = VOA vial
*** Field Sample ID: If present, use this information as the sample identifier in hard-copy reports (please include Sample Location information in the notes). If blank, and in electronic deliverable files, use Sample Location as the identifier. ****Listed turnaround time is for reporting and is in work days, as defined in the Joint LBNL/LLNL Analytical Services blanket order.

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 264562 Date Received 2/10/15 Number of coolers 1
Client LBNL Project GWMP - Old Town Groundwater Sampling in PCBs

Date Opened 2/10 By (print) BL (sign)
Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) YES (NO)
Shipping info

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☑ NO
How many Name Date
2B. Were custody seals intact upon arrival? YES NO (N/A)
3. Were custody papers dry and intact when received? (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe)

☒ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☐ Wet ☒ Blue/Gel ☐ None Temp(°C)

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES (NO)
If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? (YES) NO
10. Are there any missing / extra samples? YES (NO)
11. Are samples in the appropriate containers for indicated tests? (YES) NO
12. Are sample labels present, in good condition and complete? (YES) NO
13. Do the sample labels agree with custody papers? (YES) NO
14. Was sufficient amount of sample sent for tests requested? (YES) NO
15. Are the samples appropriately preserved? YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? YES NO (N/A)
17. Did you document your preservative check? YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? YES NO (N/A)
21. Was the client contacted concerning this sample delivery? YES (NO)
If YES, Who was called? By Date:

COMMENTS

Rev 10, 9/12

Curtis & Tompkins, Ltd.

Detections Summary for 264562

Results for any subcontracted analyses are not included in this summary.

Client : Lawrence Berkeley National Lab
Project : STANDARD
Location : GWMP - Old Town Groundwater PCBs

Client Sample ID : 75187 Laboratory Sample ID : 264562-001

No Detections

Client Sample ID : 75191 Laboratory Sample ID : 264562-002

No Detections

Client Sample ID : 75192 Laboratory Sample ID : 264562-003

No Detections

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	264562	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town Groundwater PCBs		
COC #:	08339	Diln Fac:	1.000
Requested:	E8082A	Batch#:	220278
Matrix:	Water	Instrument:	GC16
Units:	ug/L	Received:	02/10/15

Field ID:	75187	Sampled:	02/10/15 09:45
Type:	SAMPLE	Prepared:	02/10/15 15:00
Lab ID:	264562-001	Analyzed:	02/12/15 01:52
Chemist:	AVW		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.50	
Aroclor-1221	6500	ND	1.0	0.32
Aroclor-1232	6550	ND	0.50	
Aroclor-1242	6600	ND	0.50	
Aroclor-1248	6650	ND	0.50	
Aroclor-1254	6700	ND	0.50	
Aroclor-1260	6750	ND	0.50	

Surrogate	Code	%REC	Limits
TCMX	8256	67	39-120
Decachlorobiphenyl	3111	86	28-120

Field ID:	75191	Sampled:	02/10/15 10:30
Type:	SAMPLE	Prepared:	02/10/15 15:00
Lab ID:	264562-002	Analyzed:	02/12/15 02:20
Chemist:	AVW		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.50	
Aroclor-1221	6500	ND	1.0	0.32
Aroclor-1232	6550	ND	0.50	
Aroclor-1242	6600	ND	0.50	
Aroclor-1248	6650	ND	0.50	
Aroclor-1254	6700	ND	0.50	
Aroclor-1260	6750	ND	0.50	

Surrogate	Code	%REC	Limits
TCMX	8256	59	39-120
Decachlorobiphenyl	3111	81	28-120

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	264562	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town Groundwater PCBs		
COC #:	08339	Diln Fac:	1.000
Requested:	E8082A	Batch#:	220278
Matrix:	Water	Instrument:	GC16
Units:	ug/L	Received:	02/10/15

Field ID:	75192	Sampled:	02/10/15 10:50
Type:	SAMPLE	Prepared:	02/11/15 13:55
Lab ID:	264562-003	Analyzed:	02/14/15 02:15
Chemist:	ICK		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.50	
Aroclor-1221	6500	ND	1.0	0.32
Aroclor-1232	6550	ND	0.50	
Aroclor-1242	6600	ND	0.50	
Aroclor-1248	6650	ND	0.50	
Aroclor-1254	6700	ND	0.50	
Aroclor-1260	6750	ND	0.50	

Surrogate	Code	%REC	Limits
TCMX	8256	67	39-120
Decachlorobiphenyl	3111	74	28-120

Type:	BLANK	Prepared:	02/10/15 15:00
Lab ID:	QC776634	Analyzed:	02/11/15 22:35
Chemist:	AVW		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.50	
Aroclor-1221	6500	ND	1.0	0.32
Aroclor-1232	6550	ND	0.50	
Aroclor-1242	6600	ND	0.50	
Aroclor-1248	6650	ND	0.50	
Aroclor-1254	6700	ND	0.50	
Aroclor-1260	6750	ND	0.50	

Surrogate	Code	%REC	Limits
TCMX	8256	67	39-120
Decachlorobiphenyl	3111	86	28-120

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	264562	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town Groundwater PCBs		
Requested:	E8082A	Batch#:	220278
Matrix:	Water	Instrument:	GC16
Units:	ug/L	Chemist:	EAH
Diln Fac:	1.000	Prepared:	02/10/15 15:00

Type: BS Analyzed: 02/11/15 23:03
Lab ID: QC776635

Analyte	Code	Spiked	Result	%REC	Limits
Aroclor-1016	6450	5.000	4.634	93	62-127
Aroclor-1260	6750	5.000	5.276	106	60-135

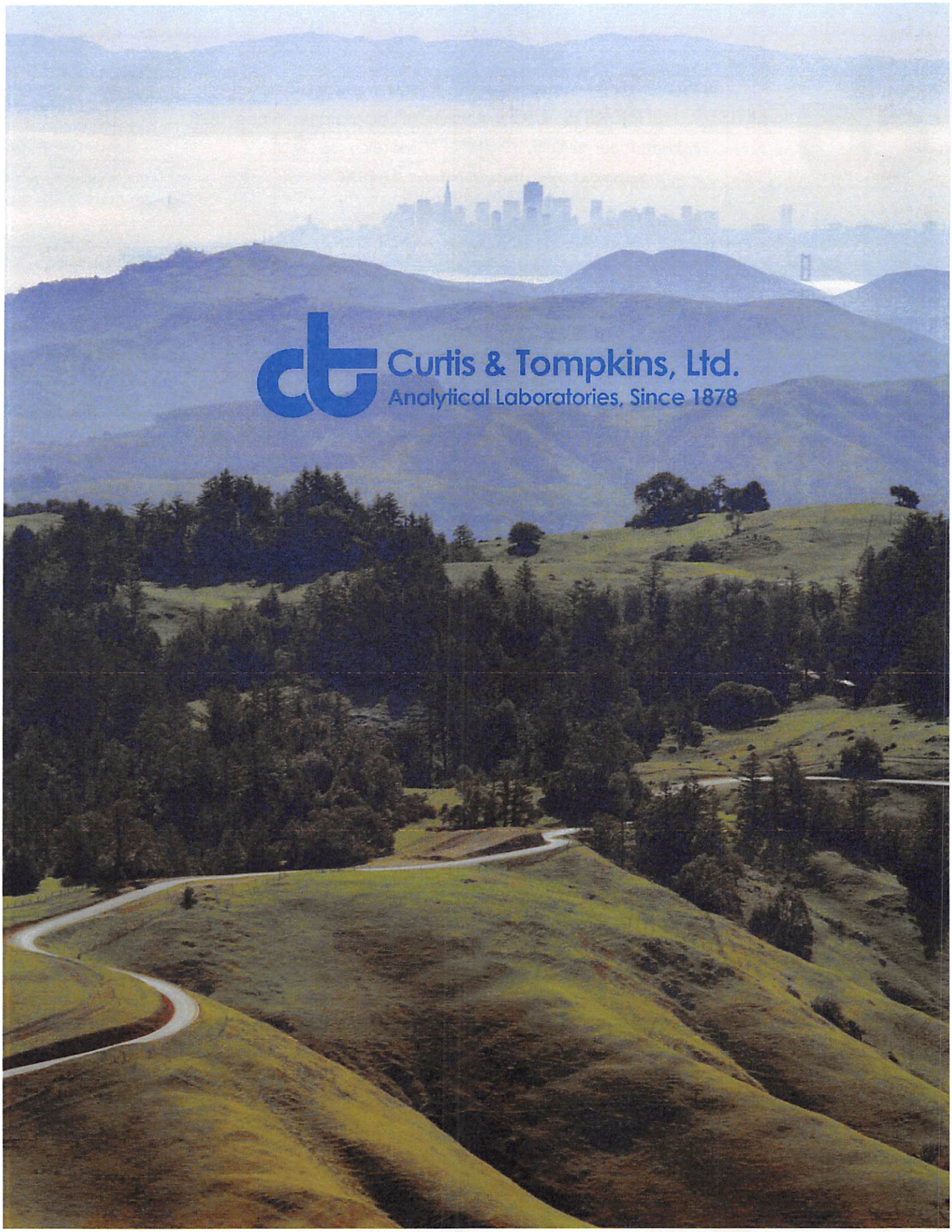
Surrogate	Code	%REC	Limits
TCMX	8256	70	39-120
Decachlorobiphenyl	3111	97	28-120

Type: BSD Analyzed: 02/11/15 23:31
Lab ID: QC776636

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	6450	5.000	4.735	95	62-127	2	29
Aroclor-1260	6750	5.000	5.120	102	60-135	3	40

Surrogate	Code	%REC	Limits
TCMX	8256	79	39-120
Decachlorobiphenyl	3111	96	28-120

RPD= Relative Percent Difference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2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 264626
ANALYTICAL REPORT

Lawrence Berkeley National Lab	Project : STANDARD
1 Cyclotron Road	Location : GWMP - Old Town GW Sampling in PCBs
Berkeley, CA 94720	Level : II

Sample ID	Lab ID
75180	264626-001
75181	264626-002
75182	264626-003
75183	264626-004
75184	264626-005
75185	264626-006
75186	264626-007
75188	264626-008
75189	264626-009
75193	264626-010
75194	264626-011
75195	264626-012

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: Isabelle Choy Date: 02/20/2015

Isabelle Choy
Project Manager
isabelle.choy@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**264626**
Client:	**Lawrence Berkeley National Lab**
Location:	**GWMP - Old Town GW Sampling in PCBs**
Request Date:	**02/12/15**
Samples Received:	**02/12/15**

This data package contains sample and QC results for twelve water samples, requested for the above referenced project on 02/12/15. The samples were received on ice and intact. All holding times and calibration criteria were met.

PCBs (EPA 8082):

All samples underwent sulfuric acid cleanup using EPA Method 3665A. All samples underwent sulfur cleanup using the copper option in EPA Method 3660B. No analytical problems were encountered.

U.C. Lawrence Berkeley National Laboratory
1 Cyclotron Road
Berkeley CA 94720

264626

LBNL ENVIRONMENTAL RESTORATION
Chain of Custody

Send final reports to: Suying Xu, Mailstop 75B0101
Send preliminary results to: Iraj Javandel, e-mail: IJavandel@lbl.gov
Phone: 510-486-6106 **Fax:** 510-486-8694

Purpose: Groundwater Monitoring Program - Old Town Groundwater Sampling in PCBs, Feb 2015

COC No.: 08344

Collection(s): **7698**

1	75180	2/11/2015 9:40	2/11/2015 9:40	Aqueous	1 Liter AG	2	None	E8082A	2-15-47
2	75181	2/11/2015 8:20	2/11/2015 8:20	Aqueous	1 Liter AG	2	None	E8082A	2-15-44
3	75182	2/12/2015 8:10	2/12/2015 8:10	Aqueous	1 Liter AG	2	None	E8082A	2-15-55
4	75183	2/12/2015 8:50	2/12/2015 8:50	Aqueous	1 Liter AG	2	None	E8082A	2-15-57
5	75184	2/11/2015 9:00	2/11/2015 9:00	Aqueous	1 Liter AG	2	None	E8082A	2-15-46
6	75185	2/11/2015 11:30	2/11/2015 11:30	Aqueous	1 Liter AG	2	None	E8082A	2-15-49
7	75186	2/12/2015 7:10	2/12/2015 7:10	Aqueous	1 Liter AG	2	None	E8082A	2-15-53
8	75188	2/11/2015 12:35	2/11/2015 12:35	Aqueous	1 Liter AG	2	None	E8082A	2-15-51
9	75189	2/11/2015 8:40	2/11/2015 8:40	Aqueous	1 Liter AG	2	None	E8082A	2-15-45
10	75193	2/12/2015 7:45	2/12/2015 7:45	Aqueous	1 Liter AG	2	None	E8082A	2-15-54
11	75194	2/11/2015 10:10	2/11/2015 10:10	Aqueous	1 Liter AG	2	None	E8082A	2-15-48
12	75195	2/11/2015 12:10	2/11/2015 12:10	Aqueous	1 Liter AG	2	None	E8082A	2-15-50

Total No. of Containers: 24
Shipping Document ID:
Turnaround Time**:** 5 days
Lab Name: CURTISTOMP
Sampled by: JKC/NS

Special Instructions/Comments:
SAMPLES DELIVERED IN ICE CHEST WITH BLUE ICE

Relinquished By (Sampler)	Relinquished By	Relinquished By
Signature: [signature] Time: 13:25	Signature: [signature] Time: 1355	Signature: Time:
Printed Name: JIMMY KCHIY Date: 2/12/15	Printed Name: T-DONOVAN Date: 2/12/15	Printed Name: Date:
Company: LBNL	Company: LBNL	Company:

Received By	Received By	Received By
Signature: [signature] Time: 1325	Signature: [signature] Time: 1355	Signature: Time:
Printed Name: T-DONOVAN Date: 2/12/15	Printed Name: SUSANNE CAREY Date: 2/12/15	Printed Name: Date:
Company: LBNL	Company: CAT	Company:

*REFERENCE DATE/TIME: Use this value for decay calculations in radiological analyses when applicable **Container Codes: AG = amber glass CG = clear glass PE = polyethylene VV = VOA vial

*** Field Sample ID: If present, use this information as the sample identifier in hard-copy reports (please include Sample Location information in the notes). If blank, and in electronic deliverable files, use Sample Location as the identifier. ****Listed turnaround time is for reporting and is in work days, as defined in the Joint LBNL/LLNL Analytical Services blanket order.

COOLER RECEIPT CHECKLIST Curtis & Tompkins, Ltd.

Login # 264626 Date Received 2/12/15 Number of coolers 2
Client LBNL Project GWMP - Old Town Groundwater Sampling

Date Opened 2/12 By (print) BL (sign) [signature]
Date Logged in [illegible] By (print) [illegible] (sign) [illegible]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
Shipping info _____

2A. Were custody seals present? .... ☐ YES (circle) on cooler on samples ☒ NO
How many _____ Name _____ Date _____
2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____

☒ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
☐ Cloth material ☒ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: ☐ Wet ☒ Blue/Gel ☐ None Temp(°C) _____

☐ Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
If YES, Who was called? _____ By _____ Date: _____

COMMENTS

_____
_____
_____
_____
_____
_____

Rev 10, 9/12

Curtis & Tompkins, Ltd.

Detections Summary for 264626

Results for any subcontracted analyses are not included in this summary.

Client : Lawrence Berkeley National Lab
Project : STANDARD
Location : GWMP - Old Town GW Sampling in PCBs

Client Sample ID : 75180 Laboratory Sample ID : 264626-001

No Detections

Client Sample ID : 75181 Laboratory Sample ID : 264626-002

No Detections

Client Sample ID : 75182 Laboratory Sample ID : 264626-003

No Detections

Client Sample ID : 75183 Laboratory Sample ID : 264626-004

No Detections

Client Sample ID : 75184 Laboratory Sample ID : 264626-005

No Detections

Client Sample ID : 75185 Laboratory Sample ID : 264626-006

No Detections

Client Sample ID : 75186 Laboratory Sample ID : 264626-007

No Detections

Client Sample ID : 75188 Laboratory Sample ID : 264626-008

No Detections

Client Sample ID : 75189 Laboratory Sample ID : 264626-009

No Detections

Curtis & Tompkins, Ltd.

Client Sample ID : 75193 Laboratory Sample ID : 264626-010

No Detections

Client Sample ID : 75194 Laboratory Sample ID : 264626-011

No Detections

Client Sample ID : 75195 Laboratory Sample ID : 264626-012

No Detections

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	264626	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town GW Sampling in PCBs		
Requested:	E8082A	Batch#:	220501
Matrix:	Water	Received:	02/12/15
Units:	ug/L	Prepared:	02/17/15 14:00
Diln Fac:	1.000		

Field ID:	75180	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/11/15 09:40
Lab ID:	264626-001	Analyzed:	02/19/15 18:55
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	68	39-120
Decachlorobiphenyl	3111	89	28-120

Field ID:	75181	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/11/15 08:20
Lab ID:	264626-002	Analyzed:	02/19/15 19:23
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	61	39-120
Decachlorobiphenyl	3111	76	28-120

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	264626	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town GW Sampling in PCBs		
Requested:	E8082A	Batch#:	220501
Matrix:	Water	Received:	02/12/15
Units:	ug/L	Prepared:	02/17/15 14:00
Diln Fac:	1.000		

Field ID:	75182	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/12/15 08:10
Lab ID:	264626-003	Analyzed:	02/19/15 19:50
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	65	39-120
Decachlorobiphenyl	3111	83	28-120

Field ID:	75183	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/12/15 08:50
Lab ID:	264626-004	Analyzed:	02/19/15 20:18
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	41	39-120
Decachlorobiphenyl	3111	39	28-120

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	264626	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town GW Sampling in PCBs		
Requested:	E8082A	Batch#:	220501
Matrix:	Water	Received:	02/12/15
Units:	ug/L	Prepared:	02/17/15 14:00
Diln Fac:	1.000		

Field ID:	75184	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/11/15 09:00
Lab ID:	264626-005	Analyzed:	02/19/15 20:45
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	56	39-120
Decachlorobiphenyl	3111	68	28-120

Field ID:	75185	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/11/15 11:30
Lab ID:	264626-006	Analyzed:	02/19/15 21:13
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	56	39-120
Decachlorobiphenyl	3111	65	28-120

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	264626	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town GW Sampling in PCBs		
Requested:	E8082A	Batch#:	220501
Matrix:	Water	Received:	02/12/15
Units:	ug/L	Prepared:	02/17/15 14:00
Diln Fac:	1.000		

Field ID:	75186	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/12/15 07:10
Lab ID:	264626-007	Analyzed:	02/19/15 21:40
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	60	39-120
Decachlorobiphenyl	3111	63	28-120

Field ID:	75188	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/11/15 12:35
Lab ID:	264626-008	Analyzed:	02/19/15 22:08
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	60	39-120
Decachlorobiphenyl	3111	74	28-120

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	264626	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town GW Sampling in PCBs		
Requested:	E8082A	Batch#:	220501
Matrix:	Water	Received:	02/12/15
Units:	ug/L	Prepared:	02/17/15 14:00
Diln Fac:	1.000		

Field ID:	75189	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/11/15 08:40
Lab ID:	264626-009	Analyzed:	02/19/15 22:35
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	70	39-120
Decachlorobiphenyl	3111	75	28-120

Field ID:	75193	Chemist:	AVW
Type:	SAMPLE	Sampled:	02/12/15 07:45
Lab ID:	264626-010	Analyzed:	02/19/15 23:03
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	82	39-120
Decachlorobiphenyl	3111	91	28-120

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	264626	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town GW Sampling in PCBs		
Requested:	E8082A	Batch#:	220501
Matrix:	Water	Received:	02/12/15
Units:	ug/L	Prepared:	02/17/15 14:00
Diln Fac:	1.000		

Field ID:	75194	Chemist:	ICK
Type:	SAMPLE	Sampled:	02/11/15 10:10
Lab ID:	264626-011	Analyzed:	02/19/15 20:26
Instrument:	GC16		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	71	39-120
Decachlorobiphenyl	3111	87	28-120

Field ID:	75195	Chemist:	ICK
Type:	SAMPLE	Sampled:	02/11/15 12:10
Lab ID:	264626-012	Analyzed:	02/19/15 20:54
Instrument:	GC16		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.48	
Aroclor-1221	6500	ND	0.96	0.31
Aroclor-1232	6550	ND	0.48	
Aroclor-1242	6600	ND	0.48	
Aroclor-1248	6650	ND	0.48	
Aroclor-1254	6700	ND	0.48	
Aroclor-1260	6750	ND	0.48	

Surrogate	Code	%REC	Limits
TCMX	8256	59	39-120
Decachlorobiphenyl	3111	70	28-120

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Polychlorinated Biphenyls (PCBs)

Lab #:	264626	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town GW Sampling in PCBs		
Requested:	E8082A	Batch#:	220501
Matrix:	Water	Received:	02/12/15
Units:	ug/L	Prepared:	02/17/15 14:00
Diln Fac:	1.000		

Type:	BLANK	Chemist:	ICK
Lab ID:	QC777507	Analyzed:	02/19/15 23:30
Instrument:	GC06		

Analyte	Code	Result	RL	MDL
Aroclor-1016	6450	ND	0.50	
Aroclor-1221	6500	ND	1.0	0.32
Aroclor-1232	6550	ND	0.50	
Aroclor-1242	6600	ND	0.50	
Aroclor-1248	6650	ND	0.50	
Aroclor-1254	6700	ND	0.50	
Aroclor-1260	6750	ND	0.50	

Surrogate	Code	%REC	Limits
TCMX	8256	62	39-120
Decachlorobiphenyl	3111	88	28-120

ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polychlorinated Biphenyls (PCBs)

Lab #:	264626	Cert #:	CA ELAP# 2896, NELAP# 4044-001
Client:	Lawrence Berkeley National Lab	Prep:	EPA 3520C
Project#:	STANDARD	Analysis:	EPA 8082
Location:	GWMP - Old Town GW Sampling in PCBs		
Requested:	E8082A	Batch#:	220501
Matrix:	Water	Instrument:	GC06
Units:	ug/L	Chemist:	ICK
Diln Fac:	1.000		

Type: BS
Lab ID: QC777508

Prepared: 02/17/15 14:00
Analyzed: 02/19/15 23:57

Analyte	Code	Spiked	Result	%REC	Limits
Aroclor-1016	6450	5.000	3.822	76	62-127
Aroclor-1260	6750	5.000	3.483	70	60-135

Surrogate	Code	%REC	Limits
TCMX	8256	61	39-120
Decachlorobiphenyl	3111	72	28-120

Type: BSD
Lab ID: QC777509

Prepared: 02/18/15 13:13
Analyzed: 02/20/15 00:25

Analyte	Code	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	6450	5.000	5.028	101	62-127	27	29
Aroclor-1260	6750	5.000	4.141	83	60-135	17	40

Surrogate	Code	%REC	Limits
TCMX	8256	89	39-120
Decachlorobiphenyl	3111	95	28-120

RPD= Relative Percent Difference